admit a fermentiferous principle, which gives rise to phenomena entirely analogous to those of the digestion of albuminoid articles of food in the stomach. When the economy appropriates to itself the albuminous principles ingested into the body, it must subject them to a constitutive molecular decomposition, which effaces from them all traces of organization. The system then assimilates them, and gives them a new organization, which is the origin of albumen, fibrine, and cruor. Now it must be noticed, on the other hand, that these principles, thus newly formed, cannot leave the economy without having been completely disorganized. This is exactly what takes place in cholera; a disease in which the presence of albuminose in the secretion is an evident proof of a disorganizing transformation. For, were it otherwise, we should see, not albuminose, but albumen, fibrine, and cruor escaping from the vessels, as by a kind of expression, through the intestinal mucous membrane, as most authors have hitherto believed. Starting from this hypothesis, it looks as if we could arrest or suspend the abnormal phenomena of cholera in the same way as certain fermentations are stopped. But all the substances calculated to produce this effect are unfortunately too active or poisonous; as the salts of lead, copper, mercury, and silver, mineral acids, &c. They would, in fact, be more dangerous than the disease itself. Tannin (and all the medicines which act in virtue of this substance) would seem rather desirable, owing to its faint action on the mucous membrane; but in spite of the favourable results obtained by Dr. Graff, of Berlin, it should not be forgotten that tannin, at the same time that it acts upon the fermentiferous substances, acts also on the albuminoid principles, and that its coagulating powers must, in large doses, be rather dangerous. It seems extremely probable, that the different prophylactic means which have been extolled in cholera, some being violent excitants, as mustard, pepper, cajeput oil, naphtha, creasote, the sesquichloride of carbon, solutions of potassa, soda, ammonia, and their various salts; others, sedative or anæsthetic agents, as opium and its preparations, Indian hemp, ether, and chloroform, act by producing in the economy, the first, a powerful reaction; the others, a stupefaction, which does not allow of the morbid disorganization. I regret, after having investigated the nature and the causes of the choleric affection, to have no especial method of cure to bring forward. I may, perhaps, conclude by stating that every one of the above-mentioned means may become all-powerful in the hands of an enlightened practitioner.—*L'Union Médicale.*

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63. *Pathology and Therapeutics of Cholera.*—"There are certain points," says Dr. Garrod, in his interesting paper on the Pathological Condition of the Blood in Cholera, "with regard to the pathology and therapeutics of the disease, which the consideration of the results of the chemical examination of the blood and other fluids naturally suggests to the mind. In the first place, it would appear that the cholera poison, when introduced into the blood in sufficient quantities, causes an intense exosmotic action of the mucous membrane of the alimentary canal, at the same time destroying its endosmotic power. The blood, therefore, being deprived of a certain amount of water and salts, by the intestinal evacuations, and, not possessing the power of regaining these by absorption from the stomach, becomes altered in the manner we have seen, and ill suited for circulation in the extreme vessels; thereby giving rise to suppression of the various excreting functions, by which in turn it is rendered impure. But a question now arises: Is this condition of blood essential, and cannot the stage of collapse be induced by the direct influence of the poison? There are certain cases known by the name of 'Cholera Sicca,' which would seem to favour this latter view; but from what I can ascertain, no analyses of blood have been made in such, and as far as my own experience goes, the amount of intestinal evacuations in any case is by no means an indication of the extent to which the blood has become altered. This is also well shown by the condition of the blood in severe bilious diarrhœa, in which its specific gravity appears to remain unaltered, the endosmotic or absorbing power probably remaining entire. Supposing this latter property entirely suspended, it would require but little amount of intestinal evacuation to cause this condition of blood; the loss of water by the skin and lungs would alone soon produce it; and that this

power is sometimes lost, will be seen in examining Case V. (Worts), in which, although many gallons of water were taken into the stomach, the blood still continued to increase in specific gravity.

"Assuming that such a condition of intestinal mucous membrane exists in cholera, it gives us but little hopes of effecting much by remedies administered by the mouth, during the collapse: and experience has shown us, that very little confidence can be placed in them. The saline drinks, recommended by Dr. Stevens, must here fail, as even water is unable to be absorbed. This led to the method of injection of saline fluids into the veins; and certainly it appears that, even in the most intense stage of collapse, patients may, for a time, be restored by their employment. Unfortunately, however, the improvement has, in most cases, proved but temporary; but still enough has been seen to cause many to think that their use is strongly called for. Should they be ever again employed, I think that more attention should be paid both to the nature and quantity of the salts contained in the fluid than has hitherto been done; and a solution should be employed whose composition resembles, as much as possible, the portion of the blood which has been lost. One would be apt to think that the blood could not bear with impunity a considerable quantity of carbonate of soda in place of the phosphate; yet such a substitution, I believe, has generally been made. May not the use of improper fluids have been in part the cause of the truth of the remark quoted by Dr. Watson, in his *Lectures on the Practice of Medicine*, that, 'However it might be with pigs and herrings, *salting* a patient in cholera was not always the same thing as *curing* him.'

"Might not some agent be injected, which would tend to prevent the exosmotic action of the intestines? Certain bodies, possessing such a power on membranes, have been found. When reaction takes place, and the watery portion of the blood becomes restored, it would then seem rational to employ drinks containing small quantities of the salts; for it does not seem improbable that the saline deficiency, which must then occur, unless supplied, may tend to prevent the due action of the kidneys and other excreting organs. At this time, also, other remedies, as calomel, etc., should be given, with the intention of restoring the excretions."—*London Journ. Med.*, May 1849.

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64. *Cholera—Absence of the Precursory Diarrhœa—Treatment of the Disease.*—At a meeting of the Royal Medical and Chirurgical Society, (Feb. 27,) Mr. Streeter said that he "should like to direct attention to the fact of the very large number of cases of cholera which occur without premonitory diarrhœa, and to the greater danger attending those cases; for I do not think that sufficient attention has been paid to those cases in which collapse has been ushered in without previous symptoms, and to those in which there is scarcely any vomiting and purging, and which, I believe, are universally fatal. There are a large number of cases in which the disease is ushered in without previous purging and vomiting. With reference to treatment, I think a distinction should be made between cases of collapse originating directly from the poison, and those in which premonitory diarrhœa has existed for several days, as in those cases the collapse is due partly to the poison, and partly to the exhaustion from serous evacuations. After the most careful observation, I have come to the belief that there can be no recovery except where nature or art sets up the action of vomiting; and, as to remedies, any attempt to check that process checks the mode which nature adopts to overcome the disease. We are constantly told, in reference to the progress of a patient, that all is well 'except the vomiting;' but I believe that the only successful way to produce reaction is to encourage the vomiting, and sustain it at intervals, regulated by the powers of the patient. With respect to the agent for the production of this, it seems to me to matter little; mustard and salt have been favourite remedies, and certainly the latter, from its known harmlessness, is worthy of adoption; cold water, also, will in many instances succeed; but there have been cases in which it will not keep it up, and then powerful stimuli must be employed."

Dr. Baly remarked that the subject of the relation of the precursory diarrhœa to cholera is important. The question is, whether the diarrhœa is a part of the disease, and if so, whether we can cut it short. "As far as I have observed at Millbank Prison, the diarrhœa is of three classes: in the one, there are one or